Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of designing a digital filter, including the steps of:

first, determining a real-valued discrete-frequency representation of a desired full length digital filter;

second, transforming said real-valued discrete-frequency representation into a corresponding discrete-time representation;

third, circularly shifting said discrete-time representation; and

fourth, applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter.

2. (Previously Presented) The method of claim 1, further including the step of circularly shifting said zero-padded reduced length filter to remove leading zeroes.

3. (Previously Presented) The method of claim 1, wherein said real-valued discrete-frequency representation is formed by a noise suppressing spectral subtraction algorithm.

4. (Previously Presented) The method of claim 1, wherein said real-valued discrete-frequency representation is formed by a frequency selective non-linear algorithm for echo cancellation.

5. (Previously Presented) The method of claim 1, wherein said shortening window is a Kaiser window.

6. (Previously Presented) The method of claim 1, further including the step of transforming said zero-padded reduced length filter into a minimum phase filter.

7. (Previously Presented) A digital convolution method, including the steps of:

first, determining a real-valued discrete-frequency representation of a desired full length digital filter;

second, transforming said real-valued discrete-frequency representation into a corresponding discrete-time representation;

third, circularly shifting said discrete-time representation;

fourth, applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter; and

fifth, convolving an input signal with said zero-padded reduced length filter.

8. (Previously Presented) The method of claim 7, further including the step of circularly shifting said zero-padded reduced length filter to remove leading zeroes.

9. (Previously Presented) The method of claims 7, further including the step of transforming said zero-padded reduced length filter into a minimum phase filter.

10. (Previously Presented) The method of claim 7, wherein the step of convolving includes the step of performing a convolution in the time domain using the discrete-time representation of said zero-padded reduced length filter.

11. (Previously Presented) The method of claim 7, wherein the step of convolving includes the step of performing a convolution in the frequency domain by using an overlap-add method.

12. (Previously Presented) The method of claim 7, wherein the step of convolving includes the step of performing a convolution in the frequency domain by using an overlap-save method.

13. (Previously Presented) A digital filter design apparatus, including:

means for determining a real-valued discrete-frequency representation of a desired full length digital filter;

means, coupled to the output of said means for determining a real-valued discrete-frequency representation, for transforming said real-valued discrete-frequency representation into a corresponding discrete-time representation;

means, coupled to the output of said means for transforming said real-valued discrete-frequency representation, for circularly shifting said discrete-time representation; and

means, coupled to the output of said means for circularly shifting said discrete-time representation, for applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter.

14. (Previously Presented) The apparatus of claim 13, further including means for circularly shifting said zero-padded reduced length filter to remove leading zeroes.

15. (Previously Presented) The apparatus of claim 13, wherein the shortening window applying means implements a Kaiser window.

16. (Previously Presented) The apparatus of claim 13, further including means for transforming said zero-padded reduced length filter into a minimum phase filter.

17. (Previously Presented) A digital convolution apparatus, including:

means for determining a real-valued discrete-frequency representation of a desired full length digital filter;

means, coupled to the output of said means for determining a real-valued discrete-frequency representation, for transforming said real-valued discrete-frequency representation into a corresponding discrete-time representation;

means, coupled to the output of said means for transforming said real-valued discrete-frequency representation, for circularly shifting said discrete-time representation;

means, coupled to the output of said means for circularly shifting said discrete-time representation, for applying a shortening window to said discrete-time representation to produce a zero-padded reduced length filter; and

means, coupled to the output of said means for applying a shortening window to said discrete-time representation, for convolving an input signal with said zero-padded reduced length filter.

18. (Previously Presented) The apparatus of claim 17, further including means for circularly shifting said zero-padded reduced length filter to remove leading zeroes.

19. (Previously Presented) The apparatus of claims 17, further including means for transforming said zero-padded reduced length filter into a minimum phase filter.

20. (Previously Presented) The apparatus of claim 17, further including means for performing the convolution in the time domain using the discrete-time representation of said zero-padded reduced length filter.

21. (Previously Presented) The apparatus of claim 17, wherein said means for convolving comprises means for performing a convolution of said input signal in the frequency domain by using an overlap-add method.

22. (Previously Presented) The method of claim 17, wherein said means for convolving comprises means for performing a convolution of said input signal in the frequency domain by using an overlap-save method.

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